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Foreign Agriculture

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FRONT COVER

A Brazil Potato Field

Potatoes for seed production grown near the city of São João de Boa Vista, State of São Paulo, Brazil. (Photo furnished by Oscar K. Moore, American Consulate General, São Paulo.)

BACK COVER

World Map—Distribution of Potato Production

The Soviet Union produces a third, or more, of the world potato crop. European countries, excluding the Soviet Union, account for more than half of the total. Of the remaining small share, North America contributes the larger part, but this amounts to only 5 or 6 percent of the world crop.

NEWS NOTES

Entomologist Returns to the OFAR

Mr. Edson J. Hambleton, Field Consultant in Entomology, recently returned from Peru where he was assigned to the Peruvian Government for a period of 6 weeks. Mr. Hambleton made an extensive tour of the locust-infested region of northern Peru to inspect locust-control work and to suggest methods for its improvement. On his return to the United States, he stopped in Panama and Honduras to investigate the problem of the banana root borer in the abacá plantations of the United Fruit Co.

Marketing Specialists Join OFAR Staff

J. Henry Burke and *George W. Van Dyne*, marketing specialists, are recent additions to the OFAR staff. They will work on the Research and Marketing programs of the Department.

Mr. Burke will be concerned with citrus fruits and citrus products and will travel abroad to obtain information regarding foreign competition with United States citrus fruits. Before leaving for Europe in mid-October, he will confer with members of the citrus industry in Florida and Texas.

Mr. Van Dyne will work with tobacco. He left in September to visit, during 6 or 7 months, various Latin American countries. He will study the markets for United States tobacco and the probable competition from Latin American production.

Dr. Taggart Leaves for Peru

Dr. Glen L. Taggart, Extension Specialist in Rural Social Sciences, left Washington for Peru on August 23. He will spend approximately 2½ months in Tingo María, working with the members of the cooperative-agricultural-station staff on an economic and social study of the agriculture of the area. On his return trip, Dr. Taggart will make a short stop in Ecuador in connection with the program of the cooperative station in that country.

Dr. Leonard Goes to Texas

Dr. Olen E. Leonard, formerly assistant head of the Division of Extension and Training, Technical Collaboration Branch, OFAR, and for the past 2½ years director of the cooperative program with Bolivia, has returned to the United States. He has resigned, effective in September, to accept a position with the University of Texas in the Department of Sociology.

Illustration on p. 212 was furnished by courtesy of W. E. Safford, American Genetic Association.

FOREIGN AGRICULTURE HALLY H. CONRAD, EDITOR

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The Potato—
A Leading World Food Crop

The potato, a native of the Americas, made possible the agricultural and industrial development of north central Europe. Used there for both food and feed, it was the mainstay of German aggression during two world wars.

by FREDERICK J. STEVENSON

Perhaps 400 years have elapsed since the common potato, *Solanum tuberosum*, was first introduced to cultivation in Europe, whereas it was brought from Ireland to be grown by the colonists in New Hampshire less than 230 years ago. Today it is one of the leading food crops of the world. Almost half a billion bushels are grown in North America, and the prewar total for the world exceeded 8 billion bushels.

Despite speculation and some scientific investigation, the exact origin of the potato remains unknown. It is native to the American Continent, and its relatives are still to be found growing wild in the elevated regions extending from the southwestern part of the United States to the southern part of South America, particularly at the higher altitudes of Bolivia and Peru and in the coastal regions and nearby islands of southern Chile. All the species seem to thrive best in a cool climate, but they respond to various day lengths, and some of the short-day species produce almost no tubers under the best growing conditions of our Northern States.

Numerous collections have been made in South America during the last 100 years, but no wild varieties have been found similar in every respect to our cultivated types. Within the areas of propagation, the multiplication of varieties by mutation and other means has resulted in the loss of the original type or has caused such confusion that the direct line of descent can no longer be recognized.

This might indicate that the natives had practiced potato selection and culture perhaps centuries before the Spanish invasion. As a matter of fact, stores of dried potatoes (Chuño) have been discovered in ancient tombs and ruined cities of Peru, showing that potatoes were probably a staple article of diet several centuries before the coming of the Spaniards. Furthermore, funeral vases closely modeled after potato tubers and resembling those produced by breeding and culture, rather than the wild forms, have been found in prehistoric Peruvian graves.

There are many interesting, but conflicting, stories concerning the discovery of the potato and the introduction of it to Europe and the United States. Some of those that are most widely believed are erroneous. The account by John Gerard is in this class. In 1597 he figured and described in his *Herbal* the potato under the title, "Potatoes of Virginia." His illustrations and descriptions were those of *Solanum tuberosum*, but he follows his description with the statement that—

> it groweth naturally in America, where it was discovered as reporteth C. Clusius; since which time I have received roots thereof from Virginia, otherwise called Norembega, which growe and prosper in my garden as in their native countrie.

As a matter of fact, the potato did not reach Virginia for more than 100 years after the publication of Gerard's *Herbal*.

Thomas Jefferson made the statement that the English found round potatoes in Virginia on their first visit, and Schoolcraft, one of the most reliable authorities on the history and customs of the American Indians, stated in an official report, published by the State of New York in 1846, that—

> the potato was certainly indigenous [to America]. Sir Walter Raleigh in his efforts at Colonization had it brought from Virginia under the original name Openawg. But none of the North American tribes are known to have cultivated it. They dig it up like other indigenous edible roots from the forest, but it has long been introduced into their villages and spread over the Northern latitudes, far beyond the present limit of Zea maize.

The openawk of Virginia was not a *Solanum* but *Glycine apios*, the tubers of which were an important food staple of all the Indian tribes of eastern North

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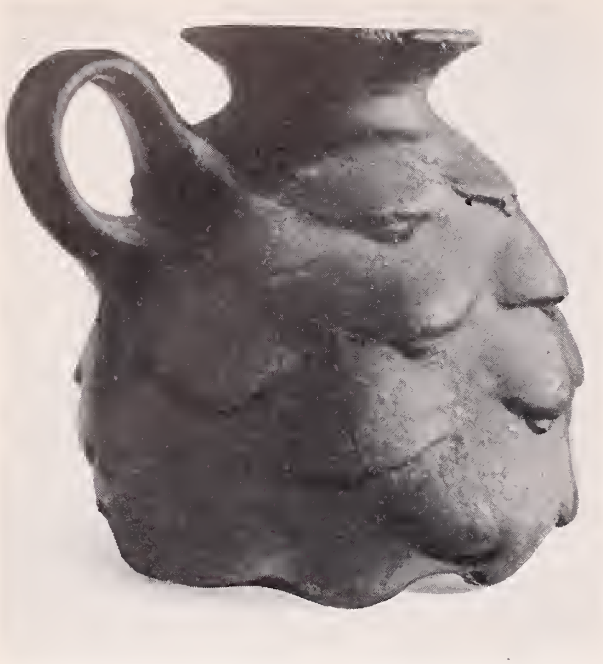
Dr. Stevenson is Principal Geneticist, Division of Fruit and Vegetable Crops and Diseases, ARA–PISAE, U. S. Department of Agriculture.



A funeral vase in the form of a conventionalized potato from a pre-Columbian grave at Chimbote, Peru.

America from the Gulf of Mexico to the St. Lawrence River. The English colonists called them Indian potatoes, bog potatoes, or ground nuts. The settlers of New France called them chapelets or rosary roots from their beadlike arrangements on strings. The Algonquins called the tubers openawk, openaug, penag, or penac. We are told that there is no species of tuber-bearing *Solanum* indigenous to eastern North America; yet the woods are still full of openawk.

One of the more reliable accounts of the discovery of the potato is that of Pedro de Cieza, who in 1538 encountered it in the upper Cauca Valley, between Popayan and Pasto, in what is now Colombia, and afterward at Quito, now the capital city of Ecuador. He described the "papa" as "a kind of ground nut which when boiled becomes as soft as a cooked chestnut but which has no thicker skin than a truffle." He stated further that the principal food of the inhabitants of the Collas region was papas, which they dry in the sun and keep from one harvest to the next. The dried papa is called Chuño. Many Spaniards became rich and returned to Spain prosperous only because they carried Chuño to sell to the mines of Potosí.

In November 1578 Sir Francis Drake found tubers of *Solanum tuberosum* being used as a food staple by Indians of southern Chile. Within less than a decade these tubers had become a regular food on Spanish ships, but no one knows with certainty who first introduced them to the gardeners of Europe. They probably were carried to Spain from Peru early in the sixteenth century. Many early introductions by explorers and travelers may have occurred. The large number of varieties that have been grown lends credence to this statement, because it is improbable that such a wide range of characters would result from breeding with only one or two introductions as original parents.

Regarding the introduction of the potato into Great Britain, the two legends more generally believed are those surrounding Raleigh and Drake. According to the first—

> *Solanum tuberosum*, the common potato of our fields and gardens, was first introduced by Sir Walter Raleigh who brought the roots from Quito and caused them to be planted in his own garden at Youghal, Ireland.

According to the Drake legend—

> The famous English admiral Francis Drake deserves the credit for the introduction of the potato in Europe. On his return from Virginia in 1586, he brought thence the potato with him. Wishing to domesticate it in England, he not only gave some of the tubers to John Gerard but also handed a part of them to his own gardener telling him to plant the precious fruit in his garden.

From this point on the two stories, though merely legends, are parallel. The plants were grown in the respective gardens and bore fruit. The gardeners, thinking the fruits, or potato apples, were the edible portions of the plants, tasted them and found them quite unpalatable. Each gardener confronted his master with the worthlessness of the new plants, and each received the order to dig them up at once. To their surprise, they found that the valuable parts had developed underground!

For more than a century after its introduction to Europe the potato was grown in the gardens of England and continental Europe as a curiosity rather than as a source of food. The Irish were the first to recognize its food value. The climate and soil of Ireland were peculiarly adapted to the cultivation of potatoes, and they soon became the only food crop of the country, serving for breakfast, dinner, and supper. Potatoes proved, however, to be not an unmixed blessing to Ireland, for, although the crop yielded an abundant return for little labor, yet an occasional failure caused untold misery and even death to many of the people, as in the case of the Irish famine in 1845. Just when the potato was introduced into Ireland is not definitely known, but it was cultivated as a field crop in that country before

1663, a year of short crops in Great Britain. At that time the Royal Society recommended that such members as had lands adapted to the cultivation of the potato should plant the new vegetable.

In spite of this recommendation, the introduction of the potato as a field crop in England was slow. Before 1699 potatoes had been introduced into Lancashire, where they became quite common, but as late as 1770 they were not known generally in the southwestern counties.

Potatoes were grown as a field crop in Scotland in 1739. The cottagers soon became successful in cultivating them, but they did not meet with favor among the higher classes. We are told that some of the pious Presbyterians looked upon potatoes with disfavor, because they could find no mention of the crop in the Bible. It was not until the Scotch were urged by hunger that they seriously undertook the cultivation of the potato, and then they soon learned of its excellent qualities.

The first active measures for the introduction of the potato into Prussia were taken by the great elector, Frederick William, who in 1651 caused potatoes to be planted in the Berlin Lustgarten. His grandson, King Frederick William I, in his efforts to promote potato production resorted to drastic steps, threatening to cut off the noses and ears of all who refused to plant them.

The real credit, however, for promoting potato culture in Prussia, especially in Silesia and Pomerania, must be given to Frederick the Great. In 1744 he caused seed potatoes to be distributed free and compelled the peasants to cultivate them. In a royal circular dated April 5, 1757, Frederick the Great showed a remarkable knowledge of potato growing. He indicated the time of plowing, manuring, and planting the fields, cautioning the farmers that if they planted small potatoes they would raise small potatoes, whereas the best results would follow from the selection of large tubers, which should be so cut as to leave an eye in each piece. The small potatoes probably resulted from virus infection; otherwise the rule would not hold.

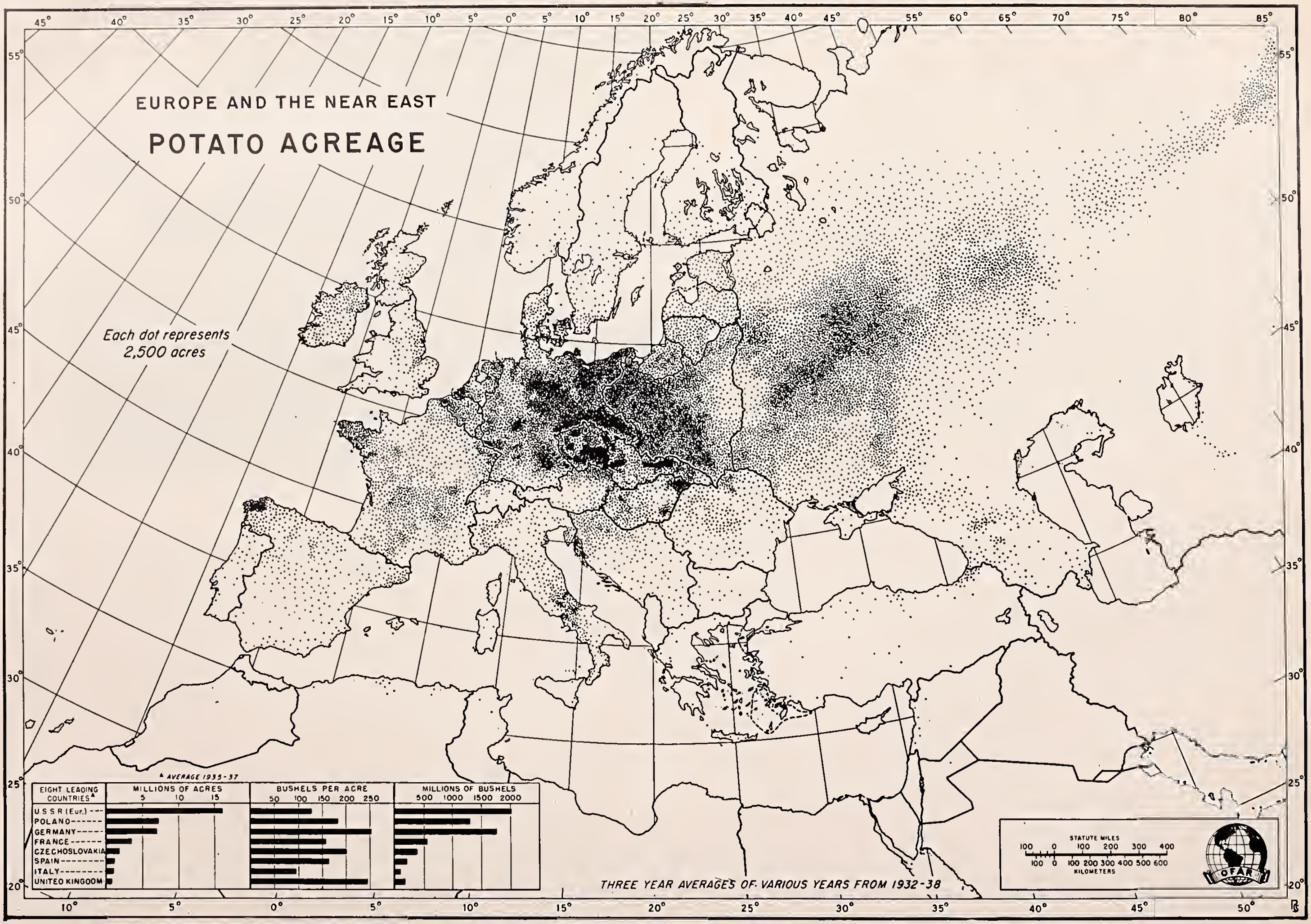
The threats of punishment and the circulars enforced by local officials had some part in increasing potato production in Prussia. But again it was famine, caused especially by the Seven Years' War, which established the industry on a firm basis.

The introduction of potatoes into France was largely due to Antoine Auguste Parmentier, who, while a prisoner in Germany during the Seven Years' War, was fed upon potatoes and learned to like them. Potatoes had been in bad repute in France owing to the attacks made upon them by physicians, who declared that they were poisonous and were the cause of many maladies. Parmentier planted them on a piece of land obtained from Louis XVI. The field was considered a sandy waste, but the potatoes turned it into a blooming garden. A soldier guard in full uniform was stationed near the field during the day but was withdrawn at night, whereupon a number of people came secretly to steal the potatoes. They ate them and planted them in their own gardens—the very object which Parmentier had in view.

At one time, when his plants were in full bloom, Parmentier presented a bouquet of the flowers to the King, who placed one in his buttonhole and gave the others to his Queen, Marie Antoinette. She appeared in the evening wearing them in her hair. All the court tried to imitate the example of their sovereigns, and the King said to Parmentier: "France will thank you some day for having found bread for the poor."

Little is known of the early introductions of the potato to North America. Some people believe that the English colonists of Virginia and Carolina obtained it from Spaniards or from other travelers. Some say that it was carried to the British West Indies in the

Dr. Stevenson puts bagging around potato fruits to prevent them from breaking off.



Nearly 90 percent of the world's potato production is in Europe, including the U. S. S. R., where it has developed as a major food source. The potato is a blessing to the northern European countries where the lightness and great acidity of the soil prevent the production of various other food crops.

early part of the eighteenth century and propagated in the mountains of Jamaica under the name of Irish potato. Potato growing in the United States seems to have got its best start in 1719 from stock brought from Ireland and grown at Londonderry, N. H.

Many of the stories relating to the introduction of the potato into Europe and North America are no doubt legendary, as well as some of the tricks that were supposed to have been adopted to get people to use the tubers for food. The spectacular increase of the potato as a food crop, however, is not legendary but is one of the miracles of agriculture. Not only has it become a leading food crop, but in many of the countries of Europe byproducts, such as alcohol, starch, flour, etc., are of great economic importance.

The prewar average world production during 1935-39, was slightly less than 8.5 billion bushels. About 91 percent was produced in Europe, including the U. S. S. R.; 5 percent in North America; nearly 3 percent in Asia, excluding the U. S. S. R.; 1 percent in South America; and less than 1 percent each in the continents of Africa and Oceania. The five largest potato-producing countries of the world were the U. S. S. R., accounting for 33 percent; Poland and Germany (1934–38), 17 and 14 percent, respectively: France, 7 percent; and Czechoslovakia, 4 percent of the world's crop.

In 1947, total world production dropped to 7.3 billion bushels. The acreage in that year, 51.2 million acres, was somewhat smaller than the 1935–39 average of 52.8 million acres, and the world average yield per acre was only 142.3 bushels as compared with 159.5 in the prewar period, largely as a result of unfavorable weather conditions, particularly in some of the European countries.

In North America a large proportion of the crop is used for food, and none of it is grown especially for industrial uses. Only the surplus and culls are manufactured into byproducts. On the other hand, a relatively large proportion of the crop in Germany, Poland, and the other leading potato-producing countries of Europe is used for the manufacture of byproducts. A failure of the potato crop in any of these countries might not cause a famine as it did in Ireland in 1845, but even in the United States, where the per capita consumption is only a little over 2 bushels, a short crop would cause much distress. This would affect not only a large number of commercial growers who depend for their living largely on potato production, but also consumers generally and especially those in the lower income group who buy more than their proportionate share of potatoes. The potato is still the poor man's most important vegetable.

Only through the combined efforts of scientists and producers can an adequate world production be assured. More than 70 diseases and insect pests attack the growing crop, and millions of dollars are spent each year in protective measures. Sprays and spray equipment have been greatly improved, and new sprays, such as DDT, for insect control have been found; but, in spite of these, heavy losses continue to occur.

One of the most effective methods of preventing such losses has been the breeding of disease-resistant varieties. At one time the potato wart threatened the industry in Europe, but wart-immune varieties were produced in England and on the Continent, and this disease was effectively controlled. In some countries there are laws compelling the producers to grow only wart-immune varieties.

Ever since the years of the severe epidemics of late blight, one of which caused the Irish famine, almost continuous research has been carried on to breed blight-immune varieties. At present, after nearly 100 years of work, success seems assured. The highest degree of resistance has been found in *Solanum demissum*, a species distantly related to the cultivated potato. By hybridization, backcrossing, and selection, varieties have been produced combining the resistance of the wild *demissum* species with the economic characters of commercial varieties. This work has been going on in Great Britain and in several countries of continental Europe, as well as in the Dominion of Canada and the United States. As the result of this work, a number of varieties have been distributed to growers which are highly resistant to what has often been referred to as "the potato disease"—late blight.

The group of diseases caused by viruses are perhaps the most widespread and the most baffling. In the group are found mild mosaic, latent mosaic, leaf roll, spindle tuber, and yellow dwarf. It is probable that one or more virus diseases occur in every potato-growing region of the world. Their effects have been observed by growers for many years. For a long time it was thought they resulted from "running out" or "degeneracy" brought about by the practice of growing, year after year, potatoes from the same tuber stock. Growers used to exchange seed tubers with more or less distant neighbors in order to overcome the degeneracy, but often the crop from the new seed was as badly run out as that from the old. Much has been done by roguing and early harvesting to provide

On the mountainsides of southern Mexico, members of the United States expedition, sent to search for wild potatoes, under the auspices of the Department's Research and Marketing Act, found profusely fruiting plants, such as the one Isidro Cisneros is displaying.

clean seed, but again the most effective method is to breed virus-immune varieties.

The United States and several of the European countries are developing varieties resistant to some of the virus diseases, and real progress can be reported. Several of the new varieties in the United States are immune to mild mosaic and to net necrosis in the tubers caused by current season's infection with the leaf-roll virus. They have already saved the industry in some sections of the country where the old susceptible varieties, some of which were standard for years, could no longer be profitably grown. Progress can also be reported in the development of varieties resistant to such other diseases as common scab, ring rot, brown rot, and to injury caused by such insects as leaf-hoppers, flea beetles, aphids, and Colorado potato beetles.

Expeditions from such countries as the United States, Great Britain, and Russia have gone into Mexico and South America in search of species and varieties that might contribute important characters not present in the potato stocks already available. As a result, a wealth of genetic material has been built up and, in most cases, is freely exchanged between the various countries of the world. As an illustration, the United States since 1930 has received varieties and species, some carrying very valuable characters, from Argentina, Australia, Bolivia, Canada, Chile, Cuba, Germany, Holland, Ireland, Java, Norway, Mexico, Peru, Philippine Islands, Russia, Scotland, and Uruguay. In exchange this country has sent since 1943 true seed and tubers of seedlings and varieties to Australia, Argentina, Belgium, Brazil, Canada, Chile, Colombia, China, Costa Rica, Cuba, England, Egypt, France, Guatemala, Haiti, Holland, Honduras, Iceland, India, Ireland, Italy, Mexico, New Zealand, Norway, Palestine, Poland, Portugal, Russia, South Africa, Spain, Sweden, Uruguay, Venezuela, and Yugoslavia.

Thus, the potato industry and the research upon which it depends for its perpetuation and expansion are international in scope. Improved varieties, cultural practices, handling, marketing, and industrial uses are due in no small part to international cooperation.

The value of the potato crop to the various countries of the world cannot be estimated. It was a life saver to millions of people during the recent world wars, and, by continued effort on the part of research men and growers, it will increase in value—not only as a food but as a source of many valuable byproducts.

South Korean Tenants Become Landowners

by CLYDE MITCHELL

One of the major problems that faced the American military authorities in Korea was the great need for land reform. The sale of farm land formerly owned by the Japanese to land-hungry peasants has been almost completed. Thus, through plans carefully worked out in advance, this problem has, to a great extent, been met.

The Japanese formerly owned more than 1,400,000 farm plots in South Korea. The sale of these lands, beginning in April 1948, was 85 percent completed by July 5, and all plots were expected to be sold by the end of the summer. The 598,000 Korean farm families who were given the opportunity to buy the Japanese lands are paying for them under terms which farmers and Government authorities both agree are fair and reasonable. The prices paid are not expressed in unstable currency but in grain raised on the land.

History of Tenancy Problem

Land tenure in Korea closely parallels that in other Oriental countries; tenancy has for years been on the increase, and the conditions under which it operates have become increasingly onerous. Three-fourths of

Notices of the land sale being distributed by airplane.

all farmers are estimated to have been tenants at the time of the Japanese surrender.

The terms under which land was rented had exacted the payment of from 50 to 70 percent of the grain produced thereon. Personal credit for family emergencies was secured only at exorbitant rates of interest. Loans by the landlord for fertilizer and other supplies were likewise expensive. Tenants of some of the large landowners sometimes reported that various benefits were bestowed by their landlords, after the manner of feudal lords, but in general "tenant squeezing" was the usual system. Population pressure tended to force the tenants to remain on the land.

When the United States occupied South Korea, the first step toward tenancy reform by the authorities was the adoption, soon after the surrender, of an ordinance which restricted the payment of rent to no more than one-third of the crop. This restriction was, and still is, widely violated by the Korean landlords. In the face of a threat of eviction a tenant ordinarily does what the landlord orders.

The next step was the consolidation of all former Japanese farm properties under the administrative jurisdiction of the Military Government. Properties of the Oriental Development Co., consisting of 38,328 chongbo (94,000 acres) of agricultural land, plus 24 mines and other enterprises, were all turned over to the New Korea Co., a Military Government agency. Some 102,000 Japanese individuals, partnerships, and corporations, owned, however, a total of 248,579 chongbo (609,000 acres) of agricultural land.

Early in 1946, the New Korea Co. was directed to locate and operate all these properties. By the time of spring planting in 1946, these had been located, land records and maps had been brought up-to-date, tenants had all signed standard written leases incorporating the one-third-rent provisions, farm credit had been provided where needed, and construction of large-scale reclamation and rehabilitation projects had been started.

The third step was the disposal of the land. Several attempts were made to pass a land-reform bill in the South Korea Interim Legislative Assembly (SKILA), half elected and half appointed by United States authorities. It proposed for all Korean farm tenants a purchase program similar to the one now under way, and the Assembly members were expected to show great interest in it. The bill, however, was never brought up for formal discussion on the SKILA floor, because a quorum could not be maintained. Although the major parties claimed to favor land reform, the members repeatedly left the floor when the bill came up. Consequently, the Assembly adjourned in March 1948 without taking action on it.

Nevertheless, on March 22, the Military Governor signed an ordinance, No. 173, which created the National Land Administration. All ex-Japanese agricultural properties were transferred to this new agency, and preparations for the land sale began.

These went forward with almost unbelievable speed. More than 13,000,000 official forms were printed; thousands of Korean employees were trained in procedures of appraisal, sale, mortgage preparation, and accounting; huge public information programs were set up; and millions of leaflets were dropped from airplanes to tell the farmers of the sale. Although various political obstacles had been advanced to hinder the project, leading government officials of every Province appeared pleased to take part in the land-sale ceremonies held April 3–10, 1948.

Terms of Land Purchase

The farmers of South Korea do not pay money for their land; the farms are sold for a figure expressed in measures of grain. Since "galloping inflation" had aroused distrust of paper money, this commodity basis seemed fair both to buyer and to seller. Each piece of land sold was valued at three times its average annual yield. With 15 years in which to complete payment for his land, and with no interest charged, a farmer may make a yearly payment of only one-fifth of his average historical yield; or, if he wishes, he may pay in advance and clear his mortgage in a shorter time. If he can increase the productivity of his land beyond the historical average yield, he receives all the benefit, with no increase made in the purchase price.

The "average annual production" figure is based on the official land classification and on actual production records during the late 1930's and early 1940's, discounted by 40 percent because of the present unavailability of fertilizer and other materials in Korea. After careful investigations in many parts of Korea the indications are that the figure chosen for the land value is essentially accurate, with perhaps some slight bias in favor of the tenant.

Clyde Mitchell spent 2 years as a Military Government official in Korea—from September 1946 to May 1948 he was Administrator of the National Land Administration and its predecessor agency, the New Korea Co., Ltd. With his land sale well under way, he returned to the United States in June 1948 to accept a Littauer Fellowship in Public Administration at Harvard University.

This Korean farmer is typical of the many peasants who acquired a share of the land formerly owned by the Japanese.

Not only have the farmers appeared to be pleased with the price they have paid for their land but the Korean Government also will get an excellent return on the agricultural property of the former Japanese owners, which the United States has stated must "inure to the benefit of the Korean people." The Government will be paid about 100,000 tons of grain each year, which may be distributed on the urban ration or used for other purposes. If the farmers wish to repay as rapidly as possible, this figure may be larger during the next few years.

Scope of Land Sale

The Japanese owned about 15.3 percent of the farm land in South Korea, including 18.3 percent of the rice land and 8.7 percent of the dry-crop area. The paddy land amounted to 205,988 chongbo (505,000 acres) and the dry-farming land to 62,631 chongbo (154,000 acres).

The average amount being bought by a farmer is small. However, the average farm family in South Korea (about 5.6 persons) cultivates only about 2 acres, including land it may be buying from the Government, additional land rented from private landlords, and any other land that it may own. Since the Japanese owned much of the best paddy land in the country, the most valuable acreage of the family is likely to be that acquired from the Government. The land sale therefore has benefited the farm family more than the small acreage figures indicate. About 28.5 percent of the farm families have been affected, or about 3,300,000 people.

In the absence of accurate census figures, it has been estimated that prior to the sale, 30 percent of the farmers were owners of all or most of their farms and 70 percent were tenants of all or most of their land. The sale is expected to change the ratio to 55 percent owners and 45 percent tenants.

Benefits Extended to Purchasers

When the South Korean farmer signs the mortgage covering his land, title passes to him as evidenced by a deed on which appear the official stamps of the land-registry office. This is an important document in the country and is highly prized by the farmer. While the mortgage is in force, seizure of the land for debt is prohibited, and disposal of it in any manner is subject to sanction by the Administration. The land can be lost only if the farmer fails to make payment to the Government on the mortgage, and then only through foreclosure procedures in the local court.

In case of a crop failure, or some other misfortune, the payment schedule of the farmer may be extended. Even if he should pay off his mortgage within the first few years, resale is prohibited for 10 years from date of purchase. This provision was put in the law to prevent speculators from paying off the mortgage in order to get control of a piece of land.

While no method has been devised to avoid the problem of land amassing and long-run growth of tenancy, the present land-sale program does provide protection to a purchaser for a minimum of 10 years, or until the mortgage is paid in full, whichever may be longer. Past land-redistribution schemes have in many cases been defeated within the first 10 to 20 years because of hard times during which landowners were forced to sell to creditors. Should this happen in South Korea at some future time, it will, of course, create a problem for the Government to solve.

During the time that the purchaser is a "client" of the National Land Administration, he is provided with fertilizer and loaned money at low interest for water fees and other expenses. The farmer associations, in one of which he may have membership, receive loans to finance large-scale improvements, such as irrigation and reclamation projects, marketing, and storage, etc. The N. L. A. also furnishes agricultural teachers and tenant supervisors who are to assist the farmer in various ways.

These advantages accruing to the farm purchaser offset most of the "favors" that a lenient landlord may have granted in the past. Furthermore, many of the most flagrant ills of landlordism have been abolished. The rent "squeeze" is no more, and the purchaser knows that for the next 15 years exactly how much grain he is expected to deliver each year. The amount is relatively small, and he will be encouraged to pay in advance so that his payment period will not be extended if crop failures and other calamities occur. During 10 years, or the life of their mortgages, 28.5 percent of the farm families will have a measure of rural security never before known in the Orient.

Program May Serve as a Pattern

In planning for the land-sale program, the United States authorities hoped that it would serve as a pattern for similar undertakings in other areas of the Orient. The situation in North Korea, for example, offers a sharp contrast to that in South Korea. North of the 38th parallel of latitude (the dividing line between the U. S. and the U. S. S. R. zones) all privately owned lands above a certain minimum size were seized by the government and parceled out in small plots to the farmers by the local Communist "People's Committees."

The farmer received no title to the land--only the "cultivation right." If he does not keep on the good side of the People's Committee, he finds himself moved off in favor of one of the Party's faithful. He must pay in grain a yearly land tax amounting to 27 percent of his rice crop. In addition, in 1946 and 1947, he was forced to sell to the government at extremely low legal prices another 20 to 50 percent of his crop in a "patriotic" rice-collection drive. Many refugees from North Korea testified to United States authorities that the farmers of North Korea had no illusions about the "magnanimous" gifts of land made to them.

Disposal of land under United States auspices in South Korea was made to the tenant who had been cultivating the land, completely without political bias. No criterion of eligibility was used other than the rent- and rice-collection record of the tenant. Virtually all the sales are being made to the tenants who have cultivated the land; the others, about 2 percent, are ineligible, usually because they already farm more land than the maximum (2 chongbo, or 4.9 acres) set by law for purchasers eligible to buy from the Government.

Land Sale Considered a Success

Everywhere that the sale is now mentioned, it is usually described by Korean and American officials as "a major success in the foreign economic field." This success is emphasized by the fact that the people in South Korea, while grateful for their deliverance from the Japanese, are resentful and impatient that the Americans have been kept in their midst for the third year. Although Korea looks forward with misgivings to the future, because of the probability of civil war when the United States withdraws, two lessons at least have been taught the people, and they will remember. A free election has been held in which the entire population participated, and the tenant-purchase program was carried out, by which more than 3,000,000 persons became owners of their soil and paid for it with their own labor and initiative.

Mexican Agrarian Policy—Postwar Developments

Mexico's agrarian policy, subjected to critical evaluation during 1946–48, is gradually being reorientated. Means for lifting farm levels of living are not yet determined, but ejidal grants no longer appear to be the sole panacea for agricultural ills.

by ANA M. GÓMEZ

An important aspect of the agrarian policy of President Alemán is the emphasis placed on the development of new agricultural lands. It is now recognized that the distribution of land to the landless by the mechanism used in the past is approaching its limit. This realization, together with the need for increasing agricultural production to feed a growing population and desire to improve the productivity of agricultural labor through the use of machinery and improved techniques have led the present administration to develop programs aimed at the fullest possible utilization of the total agricultural resources of the country. These programs are concerned principally with the expansion of irrigation and colonization.[1]

Following the Revolution of 1910, agrarian reforms have centered around the breaking up of large estates and the granting of land to landless peasants. The land composing the grant and, by extension, the community receiving it, are referred to as the ejido. By the end of 1946, the program of land distribution had placed about 31,000,000 hectares (76,300,000 acres) of land in the hands of 1,735,645 beneficiaries. This area represents approximately one-fourth of the total agricultural land of the country and one-half of its cropland. Nevertheless, there were still 455,251 persons whom the Agrarian Department had declared to have a right to land under the laws and to whom no land had yet been given. Many more landless peasants were said to be clamoring for an ejido plot but had not succeeded in getting even their right to land officially recognized. Furthermore, complaints were growing increasingly louder that the area of individual plots already granted was in many instances insufficient to provide a rural family with a decent livelihood.

Opinions Prevailing in Late 1946

Although the nature of the problem was generally recognized, proposals for its solution differed widely. One group believed that security in landholding would come only when all peasants asking for land had received grants. If there were not enough large haciendas left to expropriate, then it was necessary to reduce the legal size of inaffectible private properties and eventually to eliminate private property altogether.[2] The statement was made that the two forms of land tenure could not successfully exist side by side and that the ejido should be proclaimed as the only form of land tenure and agricultural production.

On the other hand, another group was of the opinion that the agrarian program had brought about a situation similar to that which existed before the Reform Law of 1856, when a large proportion of the agricultural lands of the country were held in mortmain by the Church and therefore had been permanently withdrawn from the market. Now the ejidos hold approximately half the country's cropland, which has been similarly withdrawn from the market, since ejidatarios are forbidden to mortgage or sell their land. The solution proposed was the desamortización of the ejido, that is, the release of the land from mortmain by granting the ejidatario the right to sell his land.

A third group, while agreeing with the objective of the Revolution—liquidating the latifundia and preventing their restoration—felt that this purpose had already been accomplished and that the need was to give adequate security to small private property holders who, after all, were as much the result of the agrarian program of the Revolution as the ejido itself.

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[1] For earlier discussions of Mexico's agricultural policies, see: Barber, Charles H. THE LAND PROBLEM IN MEXICO. Foreign Agr. 3: 99–120, illus. 1939; Wylie, Kathryn H. LAND, CREDIT, AND IRRIGATION POLICY IN MEXICO. Foreign Agr. 10: 138–146, illus. 1946; and PRODUCTION AND MARKETING POLICIES IN MEXICO. Foreign Agr. 11: 160–168, illus. 1947.

[2] Mesa Andraca, Manuel. EL PROBLEMA AGRARIO MEXICANO. Prob. Econ.-Agr. de Mex., No. 1, pp. 5–48, illus. 1946.

They realized that a large number of peasants were still in need of land but suggested, as a solution, the colonization of uninhabited coastal areas and new irrigation districts. If such projects were not sufficient to provide lands for all those seeking a plot to cultivate, then it would be necessary to look to industry as a source of employment for the excess agricultural population.

The statements made by President Alemán and the actions taken by him during his first year in office would seem to indicate that the policy of his administration is more in agreement with this third point of view than with the other two.

Measures taken by President Alemán

Two days after his inauguration, President Alemán proposed to Congress the revision of article 27 of the Constitution, the article on which the agrarian-reform program of Mexico is based. This amendment, which was promptly passed by both chambers of Congress and ratified by the State legislatures, contained as its most important provision the granting of the right of amparo (injunction) against invasion or expropriation of their lands to private landowners holding a certificate of inaffectibility. Such certificates are issued to owners of land within the maximum limit of an inaffectible private property as established by law. The amendment also enlarged the legal size of the individual ejido grant and made the provisions establishing both the size of the ejido plot and the size of an inaffectible private property a part of the Constitution, whereas formerly they had been found only in the Agrarian Code.

Other provisions contained in that amendment included: (1) The incorporation into the Constitution of article 110 of the Agrarian Code guaranteeing the inaffectibility of a private property even when improvements made subsequent to the granting of a certificate of inaffectibility may cause it to exceed the maximum legal size of a small private holding; (2) the inclusion of sugarcane among the crops for which an area larger than that of annual crops is considered inaffectible; (3) the increase in the size of an inaffectible private holding for livestock raising; and (4) the extension of the guaranties of inaffectibility enjoyed by agricultural holdings to small private livestock landholdings.

Another important decision on agrarian policy during the past year concerned landholdings used for livestock production whose owners have suffered livestock losses from foot-and-mouth disease or from measures taken to eradicate that disease. If by reason of such losses owners are unable to comply with the requirements imposed by the Agrarian Code relating to the number of livestock that should be maintained on their holdings, the latter are not subject to expropriation.

Great importance has been given to the study of programs for the redistribution of the agricultural population. During the latter part of 1947 two groups of rural families were moved from overpopulated areas in the central region to newly irrigated districts. The first of these groups consisted of 59 families from Cortazar, in the State of Guanajuato, which were taken to the irrigation district of the San Juan River in Tamaulipas. The second group was made up of 100 families from the State of Tlaxcala which were taken to Sauteña, in the Municipality of Matamoros, Tamaulipas. The Agrarian Department paid the transportation expenses and then gave the settlers a small amount of money for their initial expenses, a supply of medicines, and some building materials. Each family received 10 hectares (about 25 acres) of irrigated land, payment for which is to be made in accordance with the Colonization Law. The Banco Nacional de Crédito Agrícola y Ganadero is the institution designated to furnish them credit for the purchase of seed, tools, fertilizers, and livestock.

A significant observation is that these groups of families have been settled not as ejidos but as colonies, that is, each head of family is a private property holder and, upon accepting his plot in the colony, relinquishes his rights as an ejidatario. These two settlements are considered the beginning of a program which, it is hoped, will be greatly expanded during 1948. Plans are under way for the transportation of several hundred families from Tlaxcala, Michoacán, and other central States to new irrigation districts in northern States.

Probable Future Developments

The continuation of the Mexican program for the distribution of land is dependent on two factors; namely, the number of pending claims for land by legally qualified peasants and the availability of land with which to satisfy such claims.

As mentioned earlier, there are still 455,251 peasants with a legal right to land who have not received a grant. In addition some reports indicate that there are probably another half million claiming an ejido whose rights have not yet been officially recognized.

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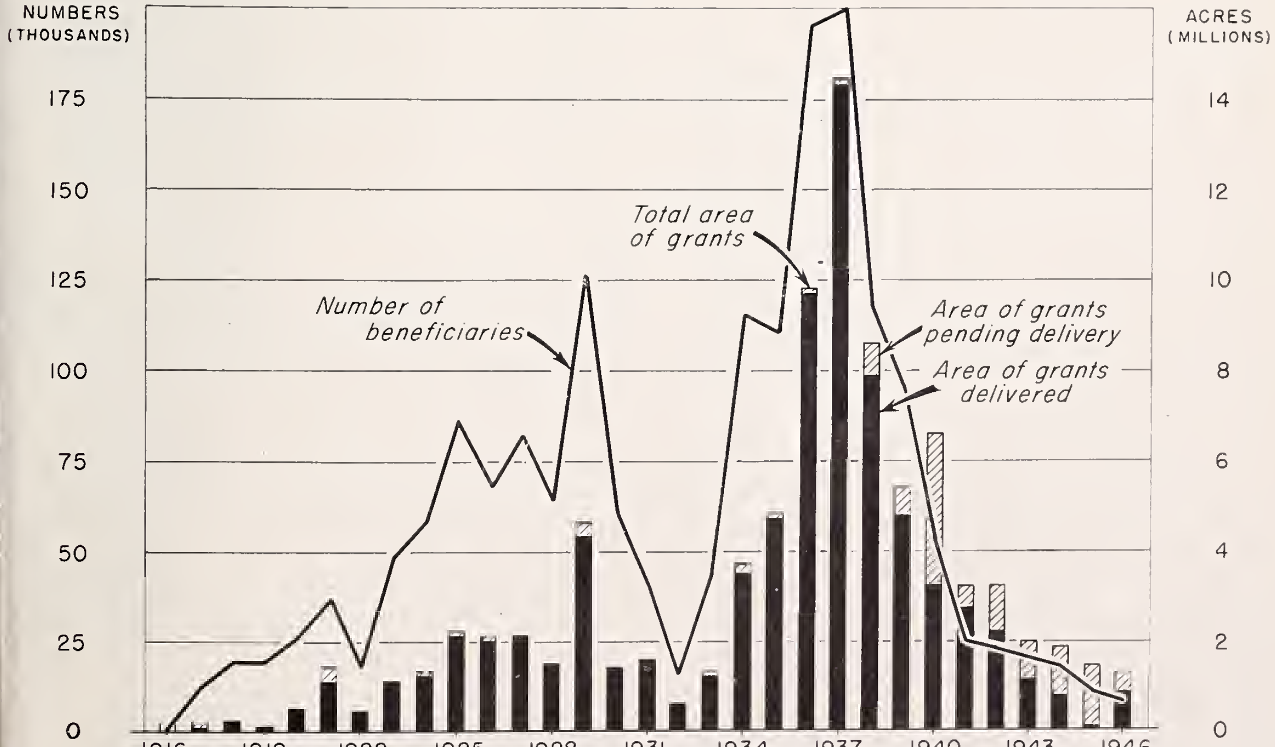
The means provided by the Agrarian Code for satisfying such claims are: (1) The expropriation of land from private properties above the maximum legal size located within a radius of 7 kilometers (4.3 miles) from the center of the community requesting land (article 57); (2) when such expropriated land is not sufficient for all legally qualified members of the community, the remaining individuals may be accommodated in vacant plots of other ejidos in the region (article 99); and (3) if there are still legally qualified individuals without a plot, a new center of population may be created in another region where land may be available (article 100).

The bulk of the grants made thus far have been the result of expropriations under article 57 of the Code. But there are definite signs indicating that a limit to this source of land is being approached. Rough approximations place the amount of cropland still available for distribution at about 1,000,000 hectares (2,500,000 acres). While 72 percent of the landless ejidatarios are located in the central region, only about 19 percent of the land subject to expropriation was located in that region in 1940, and the latter proportion is probably smaller at the present time. It would seem, therefore, that under present legislation very few of the landless peasants can expect to receive an ejido plot as a result of the expropriation of private properties located within 7 kilometers of their communities.

The second method of giving land to peasants, namely, their accommodation in vacant plots of other ejidos in the region, offers limited possibilities. In view of the growth of population, the number of plots that become available through death, abandonment, or other causes is likely to be smaller than the number of plots needed to accommodate the sons of present ejidatarios reaching legal age.

Only the third method, that is, the creation of new centers of population, promises to provide land for an important number of the landless. Little application has been made of this provision so far. From 1915 to the end of 1945, only 71,121 hectares (175,740 acres) were granted in this manner to 7,706 beneficiaries. The need for a redistribution of the agricultural population is now generally recognized, and plans are being formulated for the removal of excess population from congested districts to new irrigation districts in the north and to areas that may be opened to cultivation in the humid coastal regions. Estimates indicate that the amount of land likely to be available for new settlers in such districts during the remainder of the present administration will probably not exceed



Land distribution in Mexico under the agrarian program, 1916–46.

500,000 hectares (1,235,500 acres), after allowing for the needs of the present population of the districts. Such an amount of land would accommodate 50,000 settlers with an average holding of 10 hectares (25 acres), the present legal size of an ejido plot. After the end of this administration an additional 400,000 hectares (988,000 acres) may be available from projects now planned, and it is estimated that 450,000 hectares (1,112,000 acres) may result from the proposed development of the Papaloápan Basin.

There has been no official announcement regarding the proportion of these new agricultural areas to be settled as ejidos. As mentioned above, however, recent settlements of groups of landless peasants on newly irrigated lands have been organized as colonies under the Colonization Law and not as ejidos. If this policy is continued, a sharp decline is to be expected in the amount of land distributed to ejidos in future years.

The present distribution of the population is virtually unchanged from that existing at the beginning of the agrarian movement—great density in the central region and a sparse population along the coastal plains and in the north. The mechanism adopted for the redistribution of the land merely divided the areas subject to expropriation in each district among the peasants residing therein. The problem of reallocating the population with respect to the available resources of the country remains unsolved. Furthermore, population growth has aggravated the pressure on the land in the more densely populated regions.

Under the conditions now prevailing in Mexico, present agricultural output could probably be maintained with a reduction in the number of persons engaged in agriculture, even without any increase in capital equipment. In other words, up to a certain point a reduction in the number of agricultural workers would merely mean the withdrawal of persons now sharing in the agricultural income without contributing to it, as well as of some who are only partially employed, with the result that those who remained would be more fully occupied. Up to this point, then, the marginal productivity of agricultural labor is at or close to zero, and the existing situation is one of disguised unemployment. It should be emphasized, however, that such conditions are obviously not general throughout Mexico. In their extreme form, they probably prevail only in parts of the densely populated central region.

Events since 1946 indicate that a solution to the whole problem will be sought through a bold program of irrigation and colonization. The new policy gives great importance to the need for a geographical redistribution of the population in order to bring about a better utilization of the land resources of the country. The present administration has expressed its determination to retain the policy of proceeding with land redistribution until this source of land for the landless reaches its limit under present legislation. The general belief, however, is that this policy alone is inadequate and that a new approach is necessary.

By redistributing the population and enlarging the area cultivated per person engaged in agriculture, the productivity of the agricultural worker would be increased. But the relationship between land and labor is only one of the factors determining the productivity of the agricultural worker. There will still be room for considerable improvement in productivity under the conditions existing in Mexico through a better utilization of the land. Improved agricultural techniques and a greater use of machinery and tools would undoubtedly make a great contribution.

An agrarian problem may persist in Mexico even if the population is ideally distributed in relation to the land, even if the optimum amount of capital is invested in agriculture, and even if agricultural techniques are improved to the utmost. Full utilization of the land resources of the country may not be capable of providing full employment for all the population seeking a livelihood through agriculture. Should this prove to be the case, the search for fuller employment would have to be directed to other fields of economic activity. Thus, a satisfactory solution of the agrarian problem would necessitate consideration of factors not confined to agriculture alone.

Reading about... Foreign Agriculture

Canton Chullpas—A Socioeconomic Study in the Cochabamba Valley of Bolivia, by Olen E. Leonard. 77 pp., illus., processed. Foreign Agr. Rpt. No. 27, U. S. Dept. Agr., Washington, D. C., 1948. This is one of two studies made by Dr. Leonard of rural areas in Bolivia. According to the author, this study was made in order "to fill some of the existing gaps in the information about the people of Bolivia, their social organization, crops, and crop practices." Probably there is less information available about Bolivia, particularly the rural areas, than about any other country of the Western Hemisphere. Dr. Leonard has therefore made a valuable contribution to those who would like to know more about this country.

Better Coffee From Haiti

by GILES A. HUBERT

Since the founding of the Haitian Republic, coffee has been the mainstay of its economy. In recent years such products as sugar, sisal, and bananas have been developed largely by foreign capital and under foreign control. These new enterprises have contributed much to an increase in export trade and the national income. They have developed large plantations; employed thousands of workers, who thus acquired their first regular money wages, and have poured considerable amounts into the public treasury by way of business and export taxes. But the great crop upon which, more than any other, Haiti's many peasants depend for the little money they must have for their purchased necessities still is coffee.

Planted in a most primitive method, growing practically wild under the shade of the natural cover of the mountain slopes, harvested by peasants when they need money, and dried and hulled in the manner of their grandfathers, coffee has been improved but little in Haiti during the country's 145 years of national existence. In this respect the country for a long time was lulled into lethargy by a trade convention which allowed Haiti to market most of its annual coffee crop in France for service of a debt growing out of the emancipation and subsequent loans. The mild Haitian coffee, in spite of its imperfections and impurities, came to fit the consumption habits of France and the Low Countries of northwestern Europe. Fairly secure in this regular outlet, there was no exterior stimulation for improvement of the quality or expansion of the market. The exporters could regularly exact their toll, and the Government could depend on export taxes on coffee as a more or less regular source of revenue.

For a long time Haiti has sat serenely by and watched the greatest coffee market in the world develop at its very doorstep in the United States and Canada. It has seen Colombia, Mexico, and the Central American countries build up a coffee industry, the mild, fragrant product of which is so much desired for blends to fit the American taste. But the ending of the Franco-Haitian coffee convention in 1936 and the complete cessation of the coffee trade with Europe during the war forced Haiti to look to the American market, the opportunity so long neglected.

A modern coffee plant in Haiti.

But to capture a place on the American market, Haiti has found from the American buyers that their coffees must measure up in grade and quality with the mild coffees from Colombia and Central America. This means that the coffee must be washed rather than dried in the natural state. It means careful selection during harvesting and better methods of preparation. It means planned planting and cultivation of trees in order to create, maintain, and increase the quantity of coffee of uniform high grade and quality. It means the development of more efficient and widespread organization for grading and testing coffee and of an organized foreign-sales service.

Realizing that something had to be done about the situation if Haiti was to improve or even retain its position on the world coffee market, the Department of Agriculture [1] made a study of the quality of Haitian coffee which was published in 1943. This study showed the variety of grades and qualities of coffee from each geographic area, as well as the poor

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[1] Cassagnol, Paul L., Boney, Frank, and Denis, A. Étude sur la qualité des cafés d'haiti. Imprimerie de l'Etat, Port-au-Prince, 1943.

Starting coffee trees in the right way.

methods of preparation of most Haitian coffee, and suggested ways of improving grade and quality. Another study of the economic situation of Haitian agriculture in 1945 [2] showed that there had been no tendency for Haitian coffee production to increase from 1881 to 1945 and that the amount of Haitian exports fluctuated usually with the general level of world prices. In fact, annual coffee exports from Haiti averaged 68,860,000 pounds for the period 1887–88 to 1908–09, 67,304,000 for the period 1909–10 to 1928–29, and only 59,212,000 for the period 1929–30 to 1944–45, thus showing a general decline over the long haul.

The Coffee Law

Spurred by this situation, and rightly or wrongly fretted by the negligence of the Haitian coffee trade to do anything about it, the Legislature passed an administration-sponsored law on December 6, 1946, creating a National Office of Coffee. The preamble of the law listed the following considerations:

> . . . coffee is the base of the Haitian economy;
>
> . . . it is important to assure the development of the coffee industry in Haiti on a rational basis and to protect the crop as much at home as in the foreign market;
>
> . . . there is occasion always to improve the quality of the product, notably by progressively putting within the reach of the producer the equipment necessary for the mechanical preparation of coffee;
>
> . . . it is important also to assure a more equitable division of the income from the coffee industry between the producers and the middlemen.

The powers and functions of the Office of Coffee were established in the law as follows:

Article 4.—The National Coffee Office has the power: (*a*) To sell coffee, on the domestic market as well as on the foreign markets, for the account of the producers' cooperatives; (*b*) to see that all sales contracts with foreign markets are registered with the National Coffee Office; (*c*) to authorize the shipment of all coffee leaving Haiti; (*d*) to fix, in agreement with the Department of Agriculture and of Commerce, the minimum price to be paid to the producers, to the speculators, and to the establishments which mechanically prepare coffee; (*e*) to establish, if necessary, the minimum price at which Haitian coffee shall be sold on the foreign market; (*f*) to fix quotas, if necessary, for domestic purchases and for foreign market sales; (*g*) to give consent to guaranteed short-term loans, and at fair rates to producers, to the coffee cooperatives, and to establishments for the mechanical preparation of coffee; (*h*) to establish and to operate bonded warehouses and to give warehouse receipts; (*i*) to require, at the time of export of coffee, payment of the duties which are hereafter provided; (*j*) to contribute to the financing of the work of improving coffee plantations and of all programs for the improvement of the living conditions of the coffee producers; and (*k*) to undertake or to finance any research work, any agricultural, industrial, or credit enterprise pertaining to coffee.

In addition to these functions and powers, the Office of Coffee was charged with the responsibility of compiling, analyzing, and interpreting coffee statistics; of studying and proposing any regulations with regard to the coffee industry; of searching for new market outlets for Haitian coffee, and of giving opinions and recommendations on programs for "experimentation and expansion of coffee plantings." It is also the function of the Office to undertake propaganda "at home or abroad" for the profit of Haitian coffee and to represent the country in international organizations with regard to coffee.

All authorizations for the establishment of new coffee mills and their zones of operation and for buying stations must have the approval of the Office of Coffee.

In order to finance the prospective operations of the Office of Coffee, the law provided for a system of registration for all coffee exported from Haiti and, in addition to a regular export duty applied on coffee exports, an excess profits tax was placed upon the net income from sales of all coffee exporters. Allowing the exporters a base net profit of 5 percent, it placed a graduated tax on all profits in excess of 5 percent. The law provided that—

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[2] DARTIGUE, JEHAN. QUELQUES CONSIDÉRATIONS D'ORDRE ECONOMIQUE. Imprimerie de l'Etat, Port-au-Prince, 1946. See p. 39.

> the money collected . . . shall be placed in the general fund of the State and shall be at the disposal of the National Office of Coffee . . . during the current fiscal year only, and in the amount of the total value collected.

Finally, the law contained the following article:

> The exporter must contribute to the increase in the production of plantations and must himself also be a producer of coffee. Three years after the publication of the present law, no one can export coffee should he not have qualified under the above conditions.

The Program

As would be expected, the law as passed, even though it was a compromise of a much more drastic proposal, immediately met with severe opposition on the part of the coffee trade. It was the general opinion of the trade that the law, if applied, would ruin the coffee business in Haiti and would eventually make the Government the sole financier, buyer, processor, and exporter of coffee. Lowered profits would discourage expansion and eliminate capital with which buyers and exporters had financed the interior buyers and speculators, as well as many producers.

Then, too, this law has been criticized severely for its so-called "socialistic" provisions of an excess profits tax and for forcing exporters to become farmers.

The National Office of Coffee was established, however, after 3 months of indecision, in March 1947. So far it has not had the ruinous effect on the industry which some observers anticipated. Instead of a mammoth bureau, heavily staffed with professional office holders, a very small staff of experts was employed, with the minimum necessary clerical force.

No effort has been made to apply all phases of the law at once. Rather, the staff has set out to do what it thought it could and should do first.

Preparing a peasant's drying platform.

Concrete platforms for drying and preparing coffee are increasing.

First, it set up the system of registration for all coffee exports, as called for under the law, and began to administer, in cooperation with the Fiscal Department of the National Bank (Customs), the collection of the regular export duties on coffee.

Second, it took steps to improve the grading, classifying, and testing of coffee and to establish necessary standards. In this respect, the Office is trying to study more thoroughly the qualities and faults of coffee from the various sections of the country and to make this knowledge available as widely as possible.

Third, the Office has begun to assemble statistical series which will be helpful in obtaining more definite knowledge as to quantitative values and trends with regard to coffee production, quality, methods of preparation, and exports. These series and their analyses are necessarily important in development of policy and program.

Fourth, it has encouraged and authorized the establishment of several new, modern coffee mills for preparation of washed coffee. These are being established under private initiative and management.

Fifth, it is planning for the development of a program for future operations of the National Office of Coffee and for the improvement of coffee production.

The objectives of this program are classified under three major headings:

(1) THE INCREASE AND IMPROVEMENT OF PRODUCTION: This part of the program involves two problems; namely, increasing the yield of coffee and planting new areas to coffee trees. The yield can be increased by (*a*) soil-improvement practices, (*b*) improving the condition of coffee trees and their cover, (*c*) improving cultivation methods and fighting against disease and insect pests, and (*d*) improving methods of harvesting the coffee beans. It is proposed that the area of coffee plantings be increased by encouraging and assisting present landholders to plant more and better coffee trees and that nurseries be developed from which

plants may be distributed. The training and financing of new coffee planters is envisioned as an important part of the program. It is also hoped that many exporters will comply with the provisions of the law by establishing coffee plantings of from 15 to 75 acres. As yet, the coffee office has not pushed this provision, but it hopes some 15,000 acres of new coffee plantings can be developed.

(2) IMPROVEMENT OF METHODS OF PREPARATION: Beginning with the principle that "uniformity of types is the basis of trade," the Office of Coffee has set out to plan a program for improving coffee preparation. In this the importance of the American coffee market is recognized, and an attempt will be made to develop coffee of the uniform type and quality desired by American buyers for blends demanded by the American taste. Such uniformity is to be achieved only by the washing method of preparation, and the establishment of processing plants is to be encouraged in a number of ways.

To put the production and the preparation phases of the program in motion, the National Office of Coffee plans the establishment of 12 central demonstration farms located strategically in the different coffee-production sectors of the country. These also would be centers of organization, administration, experimentation, and dissemination of information.

The initial cost of establishing these 12 farms is estimated at 6,284,760 gourdes or $1,256,952.

(3) EXPANSION AND IMPROVEMENT OF THE MARKET: On the interior market, the objective of the program is to obtain (*a*) a higher price for the producer and (*b*) a better quality of coffee from the producer. The control of the quality of coffee is to be such as to discourage negligence on part of the producer and to assure the safeguarding of the Haitian product on the foreign markets.

Clearing and sorting outfits, such as this, are all too few in Haiti.

In a recent report, the National Office of Coffee had the following to say with regard to the situation of Haitian coffee on the world market:

> (*a*) Our washed coffees are very often tainted by basic imperfections which cause them to be classed on a level inferior in relation to similar varieties from Central America and, in a large measure, very poor.
>
> (*b*) Our unwashed coffees are prepared under conditions which do not permit a favorable appreciation of their value and these represent four-fifths of our production—an abnormal situation among the American mild-coffee-producing countries. This serves to create, most critically, our wide isolation from the Central American bloc and from Mexico and Colombia.
>
> We note, likewise, that in the United States market our washed coffee is purchased only after being submitted to a cup-test at New York, which is indicative of a situation unfavorable with regard to imports from Haiti.

To begin to rectify this situation, the Office of Coffee is working hard to improve its grading and testing system and to promote an increase in the percentage of washed coffee exported. It has found, for instance, that the washed coffees from the region around Aux Cayes have the superior qualities which meet the higher market demands. It is studying the types and qualities of coffee marketable to advantage in other countries. On the foundation of this knowledge the program for improvement of coffee from other parts of the country will be constructed.

In addition to these efforts, the Office of Coffee proposes to improve the foreign sales service. It has recommended that counselor representation abroad be appointed with view to their interest in the coffee trade. The Government should have, in the United States and in Europe, attachés whose sole duty would be to work exclusively toward assuring the support of Haitian coffee on the foreign markets. It affirms that Haitian participation in international organizations, such as the Pan American Coffee Bureau and the Central American Coffee Federation, for example, should be assured by the Government.

Thus, the Office of Coffee and its governing board have been doing first things first. They have studied the situation carefully, set up the necessary regulatory and statistical machinery, and have begun to improve technical services and to build a carefully conceived program for the future. Should the program, as envisaged, be carried out intelligently and carefully, it should serve to improve the coffee industry, which is basic to the Haitian economy, both quantitatively and qualitatively. To do less would be tragic.

INTERNATIONAL *Agricultural News*

Arthur M. Sandberg Surveys European Fish Markets

Under the auspices of the Research and Marketing Act, the OFAR has sent Arthur M. Sandberg to make a study of the marketing situation of fish and fish products in western European countries. Until assigned to this Office, Mr. Sandberg was a fish-marketing specialist in the Fish and Wildlife Service of the Department of the Interior. Late in August he conferred in France with officials of the countries that are participating in the European Recovery Program and members of the French fish trade. He will also visit the United Kingdom, Eire, the Netherlands, Belgium, western Germany, Austria, Switzerland, Italy, and Greece.

Soil Conservation Specialists Sent by FAO to Italy

Two Soil Conservation Service specialists, Glenn E. Riddell and Wilton T. White, were sent to Italy in July by the Food and Agriculture Organization to assist the Italian Ministry of Agriculture in setting up a program for soil and water conservation. As a part of their assignment, they were to conduct a 3-week meeting of technicians, sponsored by FAO, which opened in Florence, September 13. The purpose of the meeting is to acquaint European specialists, who because of the war have been cut off from normal sources of information, with techniques and current developments in soil conservation.

Members of U. S. 4–H Clubs View Italian Agriculture at First Hand

Under an International Farm Youth Exchange Project, two members of 4–H Clubs of the United States have arrived in Italy for observation of Italian agriculture and to work on farms in that country. Raymond Clyde Dankenbring, because of his interest in dairy farming was selected to work on the large land-reclamation project of the Societa Maccarese, near Rome. Ernest Alfred Hellwege was assigned to a large mixed-farming enterprise in the Po Delta belonging to the Societa per la Bonifica dei Terreni Ferraresi. The young men are reported to have expressed themselves as being pleased with the farms on which they are working. Reciprocal visits to the United States by young farm technicians of Italy will probably be arranged at a future date.

Dr. Efferson Reports on Rice Survey

The world rice supply will probably be short in 1949, but recovery to prewar levels seems likely to occur within a few years. A much longer time may elapse, however, before demand in importing countries regains prewar strength. These conclusions were reached by Dr. J. Norman Efferson, international rice specialist, following a survey of the rice situation in important producing countries of the East and major European importing countries. A detailed report is being prepared by this Office.

International Conferences

Some of the international conferences, of agricultural significance, that are planned for the current year, 1948–49, may be of interest to readers of FOREIGN AGRICULTURE. Definite information regarding place of meeting and date is not available in all cases, but revisions will be published from time to time as plans for the conferences are completed.

1948

Organization	*Place*	*Date*
Botanical Congress, S. American (2d).	Tucumán, Argentina	Oct. 10–17.
Brucellosis, Inter-American Congress	Argentina	Nov. 17–26.
FAO, Conference of......	Washington, D. C.	Nov. 15.
FAO, Council of.........	.....do.......	Nov. 8.
Plant Sanitation, Inter-Amer. Conference on.	Buenos Aires, Argentina.	September.
Technical Agriculturists, International Federation of.	Zurich, Switzerland.	October.
	1949	
Agricultural Economists, International Conference of.	....	Summer.
Chemistry, International Union of.	Amsterdam or U. S.	1949 or 1951.
Conservation & Utilization of Natural Resources, International Scientific Conference of.	....	May 16.
Dairy Congress, World	Stockholm, Sweden.	Aug. 15–19.
Economic Cooperation, Inter-American	Buenos Aires, Argentina	Mar. 28.
Forestry Conference, World.	Helsinki, Finland.	
Grasslands Conference, International (5th).	Netherlands...	June 22–26.
Inter-Amer. Conference on Agriculture (4th).	Montevideo, Uruguay.	Fall.
Seed Testing Ass'n., International.	Possibly U. S...	1949 or 1950.
Sugar Beet Research, International Institute of.	Brussels, Belgium.	Early February.
Universal Cotton Standards Conference, International.	....	Spring.

Derris in Ecuador

Derris is a viny plant, the roots of which contain rotenone. This insecticide provides the only practical control for cattle grubs, and, in addition, is effective against many insect pests of farm and garden. In concentrations used in insecticides, it is not toxic to animals and human beings. Derris was introduced into the Western Hemisphere from the Far East. It grows well in fertile soils at low altitudes. In warm, moist tropical climates the harvesting of roots may be commenced about 18 months after planting.

In the past the roots were harvested by hand, a slow and tedious undertaking. Trials have been conducted at the Cooperative Agricultural Station, Pichilingue, Ecuador, using machinery for the root harvest in an effort to reduce the production cost of derris in this hemisphere and thus to bring the product into a better competitive position in the world market.

The accompanying illustrations serve to tell the story of derris, as well as to compare hand methods with the use of machinery, as follows: (1) A 30-acre plantation of derris, at 15 months of age, started with 13,000 cuttings supplied by the experiment station at Pichilingue; (2) using hand methods, the ground cover of leaves and vines is cut with a machete and then rolled into piles with long poles; (3) the roots are dug by hand with mattocks and shovels; (4) with a tractor equipped with a 6-foot brush mower, the vines can be cleared much more quickly and cheaply; (5) a Whirlwind Terracer attached to a tractor makes digging of roots less costly than by hand labor; (6) the roots after harvest; (7) the final product of the roots is dusted, in the United States and elsewhere, on vegetables, or on animals and poultry, against infestation of insects.

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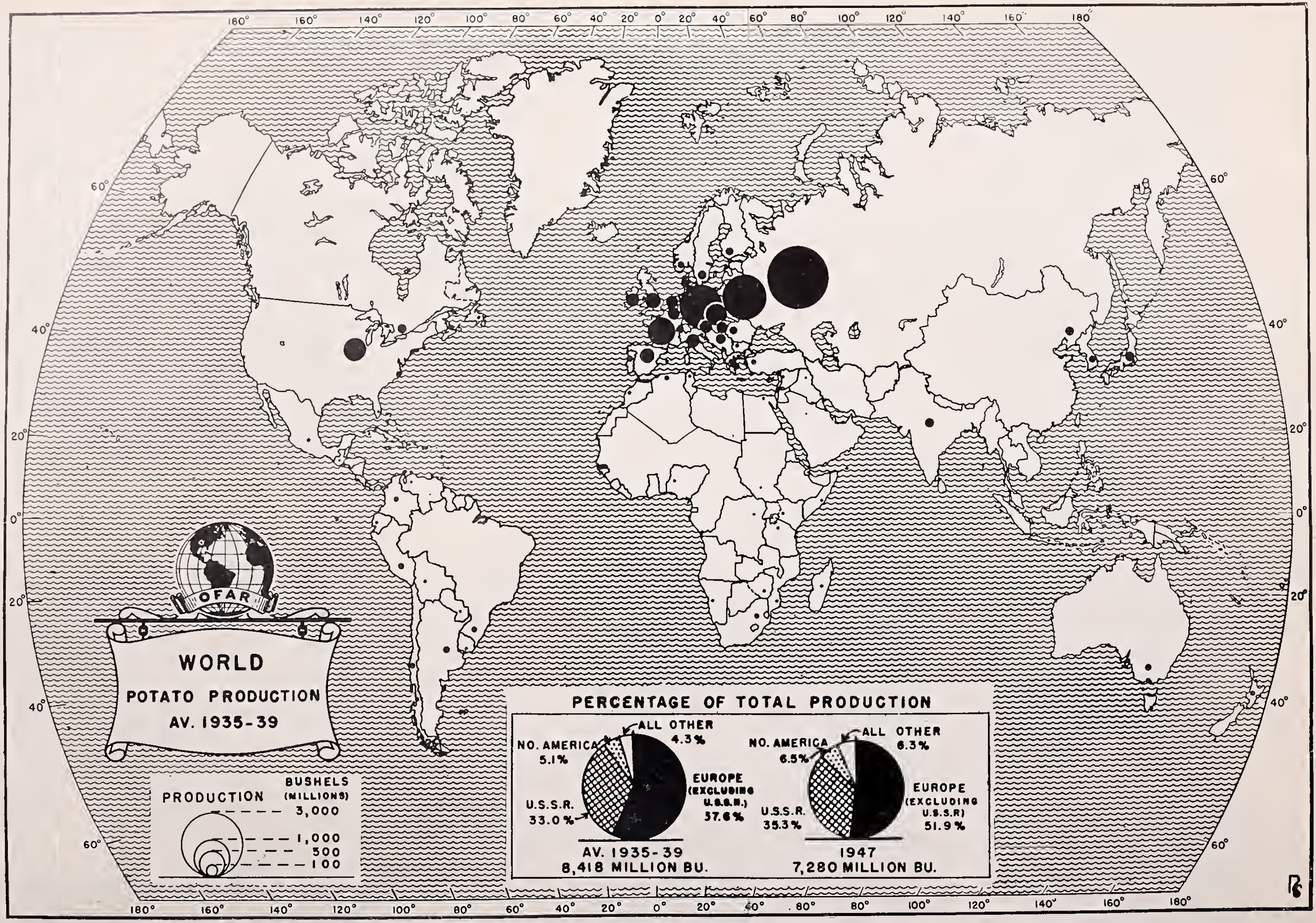

The 1947 world production of potatoes was 7,280 million bushels, or 13.5 percent smaller than the annual average crop of 1935–39. Approximately 87 percent was produced in Europe, including the Soviet Union, as compared with more than 90 percent during the prewar period. The Soviet Union, Poland, Germany, and France are the world's leading potato producers.

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